

THE
DIGESTIVE
SYSTEM



HEALTH
POWER

THE DIGESTIVE SYSTEM HEALTH POWER

by Margaret Wright

***We squander health in search of wealth,
We toil and sweat and slave
And then we squander wealth in search of health,
And all we get - the grave!***

If this verse tells accurately what life is all about, then there is very little purpose in it. Our bodies were not given to us to squander. They were created to glorify our Creator and to live in blessing to each other. If you are suffering from disease, your ability to fulfill either of these purposes is reduced.

A *principle* is a fundamental truth which nothing can change. Example: If nitroglycerine liquid is subjected to sudden impact (that is, dropped), a destructive explosion will result. That is a fact that nobody and nothing can change. Only actions carried out in accordance with principles will assure happiness and safety for all.

Laws are seldom seen as protectors, but rather as restrictors of freedom. Nevertheless, they are protectors. A *law* is a regulation designed to modify behavior in such a way as to prevent results of a violation of principle. Example: Nitroglycerine factories must be located far away from cities and towns. This law protects inhabitants of cities and towns from the accidental or deliberate violation of the above principle.

The keeping of a law protects you from the penalty of a violated principle. Experimental scientists are careful to obey the laws of safety; otherwise, destruction would often result. A look at history will show that it was through the breaking of a law (eating the forbidden fruit) that sin entered this world, bringing with it sorrow, disease and death. Our bodies operate according to certain laws just as surely as Newton's apple operated according to the principle of gravity. And just as surely, too, will come the terrible results of disobedience to health laws as from disobedience to the laws of physics and science. Man has built great monuments, physical and intellectual, that have stood the test of time. He has searched out many scientific laws that govern our universe and, through application of these laws, has made great achievements. However, many a man has achieved great

heights in his field only to find that he has paid the high price of sacrificing his health at an early age. Lives that could long have continued as a blessing to mankind have been cut down long before their allotted span expired simply because they were ignorant of or disregarded the laws of health. It is sad, but all too true that far too little attention is given to learning and living by the laws of health.

"The duty of every person, for his own sake, and for the sake of humanity, is to inform himself in regard to the laws of life, and conscientiously to obey them. All need to become acquainted with that most wonderful of all organisms, the human body. They should understand the functions of the various organs and the dependence of one upon another for the healthy action of all. They should study the influence of the mind upon the body, and of the body upon the mind, and the laws by which they are governed."¹

In accordance with this good counsel, let us consider the great fuel supply system of the body, the digestive system. The human body is subject to the power of the will. This is the governing power of the body. Unfortunately, the will is influenced by feelings as well as by the intellect. Sometimes feelings arising from inherited tendencies may exert a powerful influence over the mind. Appetite is one area where feelings hold much sway in most people. We must remember, though, that feelings, in themselves, are not intelligent. They need the intelligence of the mind to govern them in order to safeguard the well-being, or health, of the body. Being the seat of the intellect, the brain has great potential for education. Once learned, laws are programmed into the brain which will recall them for use when applicable.

There is an old Chinese proverb that says, "A journey of a thousand miles begins with but one step." Taking the wrong step to start with could put you a thousand miles off course at the journey's end. This little axiom holds true in regard to the digestive system. It is a recognized fact that most diseases can be traced to a source found somewhere in the digestive tract.

"No more wonderful piece of machinery was ever devised than that which feeds and nourishes the human body. The tongue for tasting, the teeth for chewing, the stomach for digesting, the intestines for absorbing, the blood for circulating, and the lungs for maintaining the oxygen content.

"In addition, there are the minute and still mysterious glands that supply essential chemicals to aid the process of transforming an endless variety of foods into an equally endless variety of human parts - and they keep it up for a lifetime. Surely only the Creator Himself could have constructed anything so marvelous!

"Each of us possesses one of these divinely designed systems, and it behooves us to take the best possible care of it. While provision has been made for its repair when damaged, it is much more sensible and far less costly to keep it in good condition."²

THE RECEIVING ROOM

Most of us have tongues that are well capable of tasting food. As we do this, our brains automatically record our likes and dislikes. "When stimulated by any substance that has taste, this stimulation becomes converted into a sensation in some way (we do not know how), and this sensation travels to a certain area in the brain, where we actually taste. If the nerve of taste were cut, the taste-buds could be stimulated, but we should be unconscious of it. We are responsible, therefore, for all that we swallow."³

It may come as a surprise to some that the taste can and must be educated to enjoy the food which will best serve the body's needs. Associated with every likable taste should be a knowledge of what that taste will do to the body if indulged to excess. There are many books readily available through which we may obtain a knowledge of what foods are helpful or harmful, so it is not necessary to cover this here. The purpose of this pamphlet is to help acquaint us with the mechanisms of the digestive tract so that we can better satisfy its requirements.

Digestion begins in the mouth. Here the secretions of the salivary glands are mixed with the food, preparing it for the next step to take place in the stomach. It goes without saying that the teeth must be healthy for us to chew our food well. Thorough chewing allows the digestive juices to come into contact with the many varieties of essential chemicals contained in the food which are necessary to body functions.

Adding water or other similar liquids to a solution will produce a dilute mixture. It then follows that the dilute mixture will lack the full potential of the original solution. Thus it is with the food in the mouth. If fluid is taken along with the food, the salivary secretions are diluted and accomplish only a minute portion of their intended work.

However, fluid is necessary for the creating of gastric juices in the stomach and for the transport of nourishment to the tissues. The composition of the human body is 70% water. Consequently, a shortage of water will seriously impair functions throughout the whole body. This necessary fluid should be taken into the body between meals. Six to eight glasses a day are required to satisfy this need. A still better rule of thumb is to drink one ounce of fluid daily for every two pounds of body weight. For example, a person weighing 180 lbs. would divide this figure by two. The answer would be ninety. Thus, ninety ounces of fluid (or nearly three quarts) would be the proper intake for that person. This fluid intake is absolutely vital if the work of absorption is to be carried out properly.

THE MIXING ROOM

Unfortunately, when fluids have been combined with food in the mouth, there is nothing to prevent this improperly prepared mixture from

then passing into the stomach. This first step was a vital one because there is nothing in the stomach that will compensate for incomplete work. As a result, the work of the stomach is made more difficult. Any liquid that has slowed down the secretion of the salivary glands will also slow down the secretion of gastric juices.

Structurally, the stomach is a hollow muscle which is capable of holding from three to five pints of food mixture at one time. In the soft lining of the walls are millions of little glands that produce gastric juices. They produce anywhere from ten to twenty pints of gastric juice each day. These glands can be overworked. Eating too frequently throughout the day causes them to produce continually until they reach the point of exhaustion.

It takes about five minutes from the time the taste center in the brain is excited by the food until the gastric juice begins to trickle out of the wall of the stomach in tiny droplets. At the same time, the entrance of food stimulates the stomach to begin a slow churning movement. This movement, known as peristalsis, continues as long as food remains in the stomach, but becomes more active as the food prepares to move into the next compartment, the intestines.

The cells of the stomach perform their duties with great precision. They cannot work haphazardly and blindly. If food from between-meal snacks is continually sent into the stomach its natural action is disrupted, with the muscles and the glands having to start and restart their cycles again and again. When this happens an exhausted movement causes the food to swish back and forth over the surface of the stomach where it is saturated with gastric juices, producing a "sour stomach". Three meals a day, keeping the third meal light, is enough work for the stomach. Two meals would possibly be even better, depending, of course, upon the person and his or her line of work.

To produce a healthy flow of gastric juices in the stomach one must have a good appetite. Our appetites are sharpened or dulled by things such as the presentation of the food, the surroundings, the companionship, etc. However, even a good appetite must be guided by the intelligent mind. If the mind is distracted by worry, anxiety, excitement, or business cares there will be little desire for food. This is as it should be since the flow of gastric juices is diminished and rendered poor in quality, or even halted by these mental burdens. Mealtimes should be times for mental and physical relaxation. Contentment, appreciation, and peace of mind are the best aids to digestion.

The length of time food remains in the stomach can vary from a few hours to several hours, depending on the digestibility of the particular food, the condition of the stomach, and the state of mind of the consumer. After the food has undergone preparation in the stomach, it is ready to be passed into the next compartment where the finishing touches are added preparatory to absorption.

THE FINISHING ROOMS

Through two very small tubes come the pancreatic juice and the bile. They empty into the first part of the small intestine, called the duodenum. The pancreatic juice flows vigorously as a result of the acid juice that flows into the stomach. The bile flows according to the fat content in the food.

The processed mixture, now ready for absorption, passes into the small intestine proper. In the mucous membrane coating of its walls are millions of little elevations about one-half inch high called 'villi' which give the appearance of velvet: Although tiny, each villus contains one or two veins, a tiny muscle, and a little milk-white canal. The muscle contracts; causing the villus to act as a suction pump which brings the processed food solution up through the little canal, passing it into the blood.

Even during this minute action a marvelous change is worked upon the digested food as it passes through the walls. The food substance is not the same after it reaches the blood as it was before being absorbed. By some mysterious process that even physiologists do not understand, the food mixture has been changed into that marvelous material carried by the blood to every cell in the body to be used by them as building material. How this substance used for repairing and healing is made no man can explain: it is one of the Builder's secrets.

If the digestive tract ended here, a lot less would be written concerning disease in it. But not all that enters the mouth ends up in the blood. The chemically broken-down food has become a mixture of nourishment and waste and the separation of these substances which takes place in the small intestines requires water as a solvent. The blood taking the nourishment to the cells will later bring back wastes, worn out cells, etc., and as we discussed earlier, will require a liberal amount of fluid to do this work efficiently. When all that can be dissolved has been carried out into the blood, the remains then pass into the large intestine, called the colon.

The functions of this organ are very different from the small intestines. A certain amount of water continues to be absorbed but the muscular action here is a rolling and kneading action rather than a churning. Numerous half-moon shaped folds project from the lining of the walls. The action of these folds is controlled by the peristaltic waves urging the waste matter toward the outlet.

Processing in this cavity is done by bacteria. If the food entering here has: 1) not been digested correctly, or 2) is not the right type of food, or 3) has undergone some process foreign to the natural laws of the digestive tract, then these bacteria get out of balance, producing inflammation, fermentation and/or gas. The discomfort produced by these results are bad enough in themselves, but worse still is the atmosphere created in the colon by them. This atmosphere is very conducive to the spawning of disease viruses and harmful bacteria.

The colon itself needs nourishment and the laws governing the management of the body have made provision for this. The part of food that cannot be broken down through the processes of the stomach and the intestines (that is, the “bulk” or “fibre”) is now used to benefit the health of the large colon. Because of this, it is necessary to eat fibre-containing foods that will carry the necessary mucilage all the way down through the colon to enable it to complete its work successfully.

Delay in emptying the colon will lead to stagnation of its contents. In the same way a garbage pile decays, the waste matter will break down in the colon, permitting poisons to filter into the blood, which, in turn, carries it to the whole body. According to the build-up of poisons will then follow a particular type of disease. If you have a dirty colon, then you have a dirty blood stream. Parasites, harmful bacteria, and viruses can all find an agreeable home in the fermented air of a stagnant colon.

It is not hard to see that each step in the digestive process is vital to the completion of the whole. Each organ must be given all the help it needs so that it has optimum conditions under which to do its work according to the principles built into our bodies by the Creator. When careful attention is given to understanding the principles upon which our bodies operate, we can then discover and obey the laws of health. Obedience to these laws will then protect us from the penalties of violated principles (disease) and at each phase of life health may be retained and enjoyed.

¹*Life At Its Best*, p. 1 by E.G. White Pacific Press Publishing Association, Mountain View, California.

²*Your Bible and You*, p. 277 by Arthur S. Maxwell, Review and Herald Publishing Association, Wash., D.C.

³*The Practical Guide to Health*, p. 123 by Frederick M. Rossiter, M.D., Pacific Press Publishing Association, Mountain View, California.

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